

Remarks

Applicants misunderstood the previous Office Action that withdrew all previous rejections under 35 U.S.C. §102 but issued new rejections under 35 U.S.C. §102. Applicants now respond to these new rejections under 35 U.S.C. §102. The arguments and amendments with respect to 35 U.S.C. §103 remain unchanged from the June 4, 2007 Reply.

The Examiner rejected independent claims 3 and 16 under 35 U.S.C. §102 as being anticipated by U.S. Patent No. 4,668,635 to Forster 4,820,386. These same claims are also rejected under 35 U.S.C. §102 as being anticipated by U.S. Patent No. 4,663,113 to Jester or 5,429,946 to Baccanti.

Independent claims 3 and 16 relate to a gas chromatograph column coupled to a reactor for separating the component in the sample; at least two chemical filters, each for filtering out a different undesirable component and for permitting the desired component to pass through based on the chemical properties of the undesirable and desirable components; and a detector directly coupled to each of the at least two filters for detecting the desired component.

Forster does not disclose a gas chromatograph column anywhere. In fact, an electronic search of Forster failed to find the term "chromatograph". Therefore, Forster cannot have a filter coupled to a chromatograph column. In addition, all of the filters identified in the Office Action (80, 81, 85) are all disclosed to be infrared filters and are the same. Therefore, Forster does not disclose two chemical filters, each for filtering out different undesirable components and for permitting the desired component to pass through based upon chemical properties of the undesirable and desirable components. Since Forster's filters are the same, they have the same limitations and cannot then fil-

ter out different undesirable components, as claimed by Applicants. Hence, Forster teaches away from Applicants' claimed filters. For these reasons, Forster does not anticipate all of Applicants' claimed limitations in claims 3 and 16. Therefore, the rejections under 35 USC 102 should be withdrawn.

Jester does not disclose a gas chromatograph column anywhere. In fact, an electronic search of Jester failed to find the term "chromatograph". Therefore, Jester cannot have a filter coupled to a chromatograph column. In addition, Jester also does not disclose two chemical filters, each for filtering out different undesirable components and for permitting the desired component to pass through based upon chemical properties of the undesirable and desirable components. The reason Jester fails to disclose Applicants' claimed filters is because Jester requires its two filters 16, 17 to be identical. "Each chamber contains identical collection media 16, 17" col. 4, line 48. Since Jester's filters are identical, they have the same limitations and cannot then filter out different undesirable components, as claimed by Applicants. Therefore, Jester teaches away from Applicants' claimed filters. For these reasons, Jester does not anticipate all of Applicants' claimed limitations in claims 3 and 16. Therefore, the rejections under 35 USC 102 should be withdrawn.

Baccanti's does not disclose a detector directly coupled to each of the at least two filters. Figure 1 and col. 4, lines 11-20, the area relied upon by the Examiner, states and shows means 7 for removing CO₂ directly coupled to detector 8. Not only is there no other detector coupled to another filter, there is no other detector. Detector 8 is the only detector of Baccanti and, hence, there cannot be a detector coupled to each of the two filters, assuming there is even a second filter in Baccanti.

The only other structure that is coupled to detector 8 is means 9 for temperature control but this means 9 can hardly be argued to be a filter since nothing is being fil-

tered by a temperature control, which is essentially a thermostat, and Baccanti does not disclose anything is being filtered by means 9.

The Examiner rejected claims 3 and 16 under 35 USC 102(e) as being anticipated by U.S. Patent No. 6,592,817 to Tsai. Tsai does not disclose a gas chromatograph column anywhere. In fact, an electronic search of Tsai failed to find the term "chromatograph". Therefore, Tsai cannot have a filter coupled to a chromatograph column. Since the chromatograph and two filters being coupled to the chromatograph are limitations claimed by Applicants but not disclosed by Tsai, Tsai does not anticipate all elements of Applicants' claims 3 and 16. Therefore, the rejections under 35 USC 102 should be withdrawn.

The Examiner maintained the rejection of claims 3, 6, 16, and 19 under 35 U.S.C. §103 as being unpatentable over U.S. Patent No. 4,820,386 to LaConti in view of U.S. Patent No. 6,830,730 to Rhodes. The Examiner also maintained the rejections of claims 1, 3, 6, 11-12, 14-16, and 18-21 as being unpatentable under 35 U.S.C. §103 over by LaConti in view of U.S. Patent No. 5,612,225 to Baccanti.

Independent claims 3 and 16 relate to a gas chromatograph column coupled to a reactor for separating the component in the sample; at least two chemical filters, each for filtering out a different undesirable component and for permitting the desired component to pass through based on the chemical properties of the undesirable and desirable components; and a detector directly coupled to each of the at least two filters for detecting the desired component.

Independent claims 1 and 11 relate to an electrochemical gas sensor directly coupled to a gas chromatograph column.

Rhodes does not teach or suggest a gas chromatograph column anywhere. In fact, an electronic search of Rhodes failed to find the term "chromatograph". There-

fore, Rhodes cannot have a sensor directly coupled to a chromatograph column. Rhodes also does not teach or suggest two chemical filters, each for filtering out different undesirable components and for permitting the desired component to pass through based upon chemical properties of the undesirable and desirable components. The filter 110, 460 disclosed in Rhodes relates to a mechanical filter where solid particles or liquids are prevented from traveling through. In fact, Rhodes teaches away from Applicants' claimed chemical filter because by disclosing its filter is made of a chemically inert material. Finally, Rhodes shows its filters 110, 460 far removed from the detector 560/570 (figure 1) and therefore cannot have the detector directly coupled to the filters.

Baccanti does not teach or suggest an electrochemical sensor directly coupled to a gas chromatograph column. In fact, Baccanti discloses a means 7 for removing carbon dioxide placed between the detector 8 and the chromatograph column 6, and therefore direct coupling is not possible.

Baccanti also does not teach or suggest two chemical filters coupled to the chromatograph column and each being directly coupled to a detector. Instead, Baccanti discloses a single means 7 where Applicants' invention has two filters, each for removing a different undesirable component. Applicants note its two filters are not merely twice the means 7 disclosed in Baccanti. Applicants' two filters each filter a different undesirable component, thereby making the claimed invention far more effective and efficient.

Additionally, a detector directly coupled to each filter enhances efficiency since detection is theoretically doubled when compared with Baccanti. Baccanti's does not disclose a detector directly coupled to each of the at least two filters. Figure 1 and col. 4, lines 11-20, the area relied upon by the Examiner, states and shows means 7 for removing CO₂ directly coupled to detector 8. Not only is there no other detector coupled

to another filter, there is no other detector. Detector 8 is the only detector of Baccanti and, hence, there cannot be a detector coupled to each of the two filters, assuming there is even a second filter in Baccanti.

The only other structure that is coupled to detector 8 is means 9 for temperature control but this means 9 can hardly be argued to be a filter since nothing is being filtered by a temperature control, which is essentially a thermostat, and Baccanti does not disclose anything is being filtered by means 9.

Laconti lacks any structure outside the alleged electrochemical gas sensor to which it relates. Therefore, there is no direct attachment of LaConti's sensor to anything, nevermind a gas chromatograph column. In addition, LaConti lacks any teaching or suggestion for a gas chromatograph column anywhere. In fact, an electronic search of LaConti failed to find the term "chromatograph". Therefore, LaConti cannot have a sensor directly coupled to a chromatograph column. LaConti also does not teach or suggest two chemical filters, each for filtering out different undesirable components and for permitting the desired component to pass through based upon chemical properties of the undesirable and desirable components. Instead, LaConti discloses a single filter 36 for removing particles as opposed to Applicants' invention where two filters are claimed, each for removing a different undesirable component. Applicants note its two filters are not merely twice the filter 36 disclosed in LaConti. Applicants' two filters each filter a different undesirable component, thereby making the claimed invention far more effective and efficient. Additionally, a detector directly coupled to each filter enhances efficiency since detection is theoretically doubled when compared with LaConti.

Because LaConti, Baccanti, and Rhodes in any combination do not teach or suggest at least two chemical filters coupled to the reactor, each filter for filtering out a different undesirable component and for permitting the desired component to pass through based on the chemical properties of the components, and a detector directly

coupled to each of the at least two filters for detecting the desired component, the cited references do not arrive at Applicants' claimed invention without some modification to the combined art. Moreover, no reference in any combination teaches or suggests an electrochemical gas sensor directly coupled to a gas chromatograph column. In addition, the combination of references in the manner suggested by the Examiner is even less likely given all of the art teach away from Applicants' invention by limiting their respective inventions to a single filter coupled to a reactor. Applicants' invention effectively doubles the efficiency by using two filters, each for filtering out a different component. Additionally, Rhodes teaches away from Applicants' claimed invention by specifically disclosing its filter as being chemically inert, which is the opposite of Applicants' chemical filters for filtering components based on its chemical properties.

For references to be properly modified in a rejection under 35 USC §103, there must be some teaching or suggestion in the references to make the suggested modification. Absent the requisite teaching or suggestion, the modification would be improper. As mentioned above, there is no teaching or suggestion for at least two filters coupled to the reactor, each filter for filtering out a different undesirable component and permitting the desired component to pass through, and a detector coupled to each of the at least two filters for detecting the desired component. There is also no teaching or suggestion for directly coupling an electrochemical gas sensor with a gas chromatograph. Without the requisite teachings or suggestions to modify the art to arrive at the claimed invention, such modification is improper. Applicants' claimed invention is even less obvious given Rhodes teaches away from a chemical filter by requiring a chemically inert filter.

Accordingly, Applicants' traverse the Examiner's 35 U.S.C. §103 rejections of and respectfully submit these rejections be withdrawn.

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Response to Office Action

Respectfully submitted,

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